Environmental Resources Management

12755 Olive Blvd
Suite 110
St. Louis, MO 63141
(314) 682-3980
(314) 682-3970 (fax)

August 28, 2007

Missouri Department of Natural Resources
Division of Environmental Quality
St. Louis Regional Office
7545 South Lindbergh, Suite 210
St. Louis, Missouri 63125

RE: Proposed Preventative Action Measures
Discharge Limit Exceedances & Iron Fouling Issues
Former SECO Products Facility - Washington, Missouri
NPDES Permit No. MO-0129313
ERM Project No. 0060492

Dear Division of Environmental Quality:

BACKGROUND

On behalf of Hussmann Corporation (Hussmann), Environmental Resources Management (ERM) is submitting this letter outlining a proposed plan to address historic daily and monthly discharge exceedances associated with the permitted discharge from the stripper tower ground water remediation system at the above referenced Site. ERM indicated in the July 26, 2007 letter to your office associated with the submittal of the 2nd Quarter 2007 Discharge Monitoring Reports (DMRs) for the above referenced Site that an alternative preventative maintenance approach would be presented to your office by the end of August 2007. Based upon previous letters sent to your office accompanying DMRs when excedences have occurred, the primary root cause for the exceedances is associated with the premature fouling of the stripper tower media with iron deposits. This issue is a common problem with packed-media air stripping towers. The issue is typically managed through a program including periodic preventative maintenance, media cleaning, media change-out, and sometimes treatment of the influent water to either "filter-out" the iron or render the iron soluble through the addition of a sequestering agent, so that it "passes-through" the stripper tower and does not precipitate out or build up on the stripper tower packed media.

Historically, as identified in the July 27, 2006 letter that accompanied the Second Quarter 2006 DMRs, the discharge exceedances during the Second Quarter 2006 were attributed to a number of discharge line disturbances causing premature fouling of the stripper tower media.

However, between the change out of the stripper tower media on July 17, 2006 and the exceedance identified by the October 24, 2006 (4th Quarter 2006) sampling event, no discharge line or ground water recovery system disturbances were identified. Therefore, the root cause of the 4th Quarter 2006 exceedance was identified as premature clogging of the media, which was caused by the extra nutrient loading to the system from the new recovery well, RW-8.

Beginning in January 2007, in an effort to take a proactive approach to preventing the iron fouling of the stripper tower media, and consistent with the request made by the USEPA Project Manager in an October 19, 2006 comment letter, ERM initiated a program by which the stripper tower media was inspected during each monthly operation and maintenance (O&M) event performed at the Site. This was done to determine the degree to which iron oxide was building up on the media. Under this program, if the media was determined to have appreciable buildup, it was cleaned, in situ, with a muriatic acid and water solution. If the media was severely clogged and/or the in situ cleaning was not effective, the media was changed out with new media. This preventative maintenance approach of in situ cleaning of the media appeared to be working during the first five months of 2007. However, the 2nd Quarter 2007 exceedances of the discharge standards for 1, 2-DCE that were experienced while implementing the current in situ cleaning preventative maintenance approach, and the subsequent need to change out the media to bring the stripper tower discharge back into compliance, resulted in a need to re-evaluate the current preventative action program for the stripper tower at the Site.

INFLUENT WATER CHEMICAL PROPERTIES

ERM has confirmed, through the chemical analyses of a composite influent water sample collected from recovery wells RW-2, RW-3, and RW-8 at the Site on July 23, 2007, that the stripper tower influent water contains a total iron concentration of 10 mg/L. The iron concentration has been further analyzed to determine that all of the iron present is of the ferric iron (Fe^{+3}) species. Ferric iron is not soluble as a cation, and can easily be precipitated out in a stripper tower environment with high dissolved oxygen content (> 2 mg/L). Additionally, the alkalinity of the influent water was determined to be 390 mg/L. A copy of the analytical report is included in Attachment 1 of this letter.

PREVENTITIVE ACTION EVALUATION

In an effort to develop a more proactive and effective stripper tower maintenance program, ERM re-evaluated the approach used concerning preventative maintenance associated with the stripper tower media. ERM

looked into a number of continuous influent water treatment options to manage the precipitation of iron, as well as the growth of iron oxide bacteria, both of which are the most likely contributors to the fouling of the stripper tower media. Since the facility does not have access to a sewer connection to the City of Washington, Missouri wastewater treatment plant, a key factor that needs to be considered during the evaluation of an approach that included the addition of sequestering agents or biocides, was that the addition of these items to the stripper tower influent water would not cause any additional issues associated with the discharge. Therefore, the sequestering agents or biocides considered would need to be safe for direct discharge to surface water.

To this end, ERM contacted the supplier of the stripper tower media used at the Site, Jaeger Products, Inc. (Jaeger) of Houston, Texas, to assess what options were available for augmenting the influent water to control the iron fouling issue. Based upon the physical (flow rate) and chemical (pH, iron, and alkalinity) properties of the influent water, Jaeger recommended the use of a sequestering agent that they manufacture (JP-7), which was developed specifically for control of iron fouling in packed media air stripping towers. JP-7 is a sodium phosphate-based liquid sequestering agent that meets the requirements of the National Sanitation Foundation (NSF) Standard 60 for chemicals used in the water treatment industry.

Since a Hussmann or ERM representative is not on-site on a daily basis, the JP-7 would be metered into the influent water using an automated chemical feed pump. The JP-7 would be metered at a rate less than or equal to the recommended maximum use of 30 mg/L as indicated on the material safety data sheet (MSDS) contained in Attachment 2 of this letter. Because the physical and chemical properties of influent ground water can change over time, Jaeger typically recommends that a pilot study be performed for a period of approximately three (3) months in order to determine the effectiveness of the JP-7 sequestering agent at the Site.

To evaluate the JP-7 sequestering agent in controlling the iron fouling of the stripper tower media, ERM, on behalf of Hussmann, respectively requests approval to perform a pilot study at the Site through the end of 2007 to determine JP-7's effectiveness in controlling the iron fouling of the stripper tower media. During the performance of the pilot study, ERM will continue to visually inspect the stripper tower media during the monthly scheduled O&M visits to the Site to assess the degree to which the JP-7 is impeding the iron fouling in the stripper tower.

We look forward to receiving approval from your office to perform the pilot study to address premature iron fouling in the stripper tower media, which has resulted in periodic exceedances of the permitted discharge standards for the Site. ERM, on behalf of Hussmann, is prepared to implement this pilot study immediately upon receipt of approval from your office. If you have any question or comments concerning the contents of this letter please do not hesitate to contact me.

Sincerely,

Alan J. Cork, P.E.
Senior Project Manager

Attachments

cc: Tom Wind - Hussmann
David Sordi – Ingersoll Rand (electronic copy)
Daniel Gravatt – USEPA Region VII
Bruce Stuart - MDNR

Attachment 1

Stripper Tower Influent Water Chemical Analysis

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 500-5512-1

Job Description: SECO

For:
ERM Inc.
12755 Olive Blvd
Suite 110
St. Louis, MO 63141

Attention: Mr. Alan Cork

Rich Mannz
Project Manager II
rmannz@stl-inc.com
08/02/2007

These test results meet all the requirements of NELAC for accredited parameters.

The Lab Certification ID# is 100201.

All questions regarding this test report should be directed to the STL Project Manager whose signature appears on this report. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

ACCREDITED IN ACCORDANCE WITH nelac

Job Narrative
500-J5512-1

Comments
No additional comments.

Receipt
All samples were received in good condition within temperature requirements.

Metals
Method 6010B: The method blank for preparation batch 19295 contained a target compound,Fe, above the reporting limit (RL). The associated sample 500-5512-1 contained detects for this analyte at concentrations greater than 10X the value found in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

No other analytical or quality issues were noted.

General Chemistry
No analytical or quality issues were noted.

EXECUTIVE SUMMARY - Detections

Client: ERM Inc.

Job Number: 500-5512-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
500-5512-1	**S.T. INFLUENT SAMPLE**					
Iron		10	B	0.10	mg/L	6010B
Alkalinity		390		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity as CaCO3		390		5.0	mg/L	SM 2320B
Ferric Iron		10		0.050	mg/L	SM 3500 FE D

METHOD SUMMARY

Client: ERM Inc. Job Number: 500-5512-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Inductively Coupled Plasma - Atomic Emission Spectrometry	STL CHI	SW846 6010B	
Acid Digestion of Aqueous Samples and Extracts	STL CHI		SW846 3010A
Alkalinity, Titration Method	STL CHI	SM18 SM 2320B	
Ferrous and Ferric Iron	STL CHI	SM18 SM 3500 FE D	

LAB REFERENCES:

STL CHI = TestAmerica Chicago

METHOD REFERENCES:

SM18 - "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SW846 - "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: ERM Inc.

Job Number: 500-5512-1

Method	Analyst	Analyst ID
SW846 6010B	Smith, Todd D	TDS
SM18 SM 2320B	Brogan, Mary T	MTB
SM18 SM 3500 FE D	Brogan, Mary T	MTB

SAMPLE SUMMARY

Client: ERM Inc.

Job Number: 500-5512-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
500-5512-1	S.T. INFLUENT SAMPLE	Water	07/23/2007 1130	07/24/2007 0920

SAMPLE RESULTS

Mr. Alan Cork
ERM Inc.
12755 Olive Blvd
Suite 110
St. Louis, MO 63141

Job Number: 500-5512-1

Client Sample ID: S.T. INFLUENT SAMPLE
Lab Sample ID: 500-5512-1

Date Sampled: 07/23/2007 1130
Date Received: 07/24/2007 0920
Client Matrix: Water

Analyte	Result/Qualifier		Unit	MDL	RL	Dilution
Method: 6010B			Date Analyzed:		07/31/2007 2118	
Prep Method: 3010A			Date Prepared:		07/25/2007 1620	
Iron	10	B	mg/L	0.048	0.10	1.0
Method: SM 2320B			Date Analyzed:		07/27/2007 0939	
Alkalinity	390		mg/L	1.9	5.0	1.0
Bicarbonate Alkalinity as CaCO3	390		mg/L	1.9	5.0	1.0
Carbonate Alkalinity as CaCO3	ND		mg/L	1.9	5.0	1.0
Hydroxide Alkalinity	ND		mg/L	1.9	5.0	1.0
Phenolphthalein Alkalinity	ND		mg/L	1.9	5.0	1.0
Method: SM 3500 FE D			Date Analyzed:		07/25/2007 0852	
Ferrous Iron	ND		mg/L	0.050	0.050	1.0
Ferric Iron	10		mg/L	0.050	0.050	1.0

DATA REPORTING QUALIFIERS

Client: ERM Inc.

Job Number: 500-5512-1

Lab Section	Qualifier	Description
Metals		
	B	Compound was found in the blank and sample.

QUALITY CONTROL RESULTS

Client: ERM Inc.

Job Number: 500-5512-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 500-19295					
LCS 500-19295/2-A	Lab Control Spike	T	Water	3010A	
MB 500-19295/1-A	Method Blank	T	Water	3010A	
500-5512-1	S.T. INFLUENT SAMPLE	T	Water	3010A	
Analysis Batch:500-19676					
MRL 500-19676/17	Method Reporting Limit Check	T	Water	6010B	
LCS 500-19295/2-A	Lab Control Spike	T	Water	6010B	500-19295
MB 500-19295/1-A	Method Blank	T	Water	6010B	500-19295
500-5512-1	S.T. INFLUENT SAMPLE	T	Water	6010B	500-19295

Report Basis
T = Total

General Chemistry					
Analysis Batch:500-19225					
LCS 500-19225/2	Lab Control Spike	T	Water	SM 3500 FE D	
MB 500-19225/1	Method Blank	T	Water	SM 3500 FE D	
500-5512-1	S.T. INFLUENT SAMPLE	T	Water	SM 3500 FE D	
500-5512-1MS	Matrix Spike	T	Water	SM 3500 FE D	
500-5512-1MSD	Matrix Spike Duplicate	T	Water	SM 3500 FE D	
Analysis Batch:500-19436					
LCS 500-19436/3	Lab Control Spike	T	Water	SM 2320B	
MB 500-19436/2	Method Blank	T	Water	SM 2320B	
500-5512-1	S.T. INFLUENT SAMPLE	T	Water	SM 2320B	

Report Basis
T = Total

Client: ERM Inc.

Job Number: 500-5512-1

Method Blank - Batch: 500-19295

Method: 6010B
Preparation: 3010A

Lab Sample ID: MB 500-19295/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/31/2007 1911
Date Prepared: 07/25/2007 1620

Analysis Batch: 500-19676
Prep Batch: 500-19295
Units: mg/L

Instrument ID: TJA ICAP 61E Trace Analy
Lab File ID: P40731C
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Iron	0.17		0.048	0.10

Lab Control Spike - Batch: 500-19295

Method: 6010B
Preparation: 3010A

Lab Sample ID: LCS 500-19295/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/31/2007 1917
Date Prepared: 07/25/2007 1620

Analysis Batch: 500-19676
Prep Batch: 500-19295
Units: mg/L

Instrument ID: TJA ICAP 61E Trace Analy
Lab File ID: P40731C
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Iron	1.00	0.991	99	80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: ERM Inc.

Job Number: 500-5512-1

Method Reporting Limit Check - Batch: 500-19676

Method: 6010B
Preparation: N/A

Lab Sample ID: MRL 500-19676/17
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/31/2007 1720
Date Prepared: N/A

Analysis Batch: 500-19676
Prep Batch: N/A
Units: mg/L

Instrument ID: TJA ICAP 61E Trace Analy
Lab File ID: P40731C
Initial Weight/Volume: mL
Final Weight/Volume: 1 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Iron	0.100	0.107	107	80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: ERM Inc.

Job Number: 500-5512-1

Method Blank - Batch: 500-19436

Method: SM 2320B
Preparation: N/A

Lab Sample ID: MB 500-19436/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/27/2007 0923
Date Prepared: N/A

Analysis Batch: 500-19436
Prep Batch: N/A
Units: mg/L

Instrument ID: Man-Tech PC-Titrate
Lab File ID: N/A
Initial Weight/Volume: mL
Final Weight/Volume: mL

Analyte	Result	Qual	MDL	RL
Alkalinity	ND		1.9	5.0
Bicarbonate Alkalinity as CaCO3	ND		1.9	5.0
Carbonate Alkalinity as CaCO3	ND		1.9	5.0
Hydroxide Alkalinity	ND		1.9	5.0
Phenolphthalein Alkalinity	ND		1.9	5.0

Lab Control Spike - Batch: 500-19436

Method: SM 2320B
Preparation: N/A

Lab Sample ID: LCS 500-19436/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/27/2007 0931
Date Prepared: N/A

Analysis Batch: 500-19436
Prep Batch: N/A
Units: mg/L

Instrument ID: Man-Tech PC-Titrate
Lab File ID: N/A
Initial Weight/Volume: mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	100	91.7	92	80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: ERM Inc.

Job Number: 500-5512-1

Method Blank - Batch: 500-19225

Method: SM 3500 FE D
Preparation: N/A

Lab Sample ID: MB 500-19225/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/25/2007 0850
Date Prepared: N/A

Analysis Batch: 500-19225
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Ferrous Iron	ND		0.050	0.050

Lab Control Spike - Batch: 500-19225

Method: SM 3500 FE D
Preparation: N/A

Lab Sample ID: LCS 500-19225/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/25/2007 0851
Date Prepared: N/A

Analysis Batch: 500-19225
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ferrous Iron	0.500	0.500	100	80 - 120	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 500-19225

Method: SM 3500 FE D
Preparation: N/A

MS Lab Sample ID: 500-5512-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/25/2007 0853
Date Prepared: N/A

Analysis Batch: 500-19225
Prep Batch: N/A

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 500-5512-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/25/2007 0854
Date Prepared: N/A

Analysis Batch: 500-19225
Prep Batch: N/A

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Ferrous Iron	100	100	75 - 125	0	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

STL-4124 (0901)

500-5512

Client	Project Manager	Date	Chain of Custody Number
ERM	Mr. Alan Cork	7/23/2007	308833
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
12755 OLIVE BLVD SUITE: 110	(314) 682-3980		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
ST. LOUIS / MO / 63141	Alan Cork	Rich Mannz	
Project Name and Location (State)	**Carrier/Waybill Number**		
SECO	Hand Delivery to Laboratory		
Contract/Purchase Order/Quote No.			
0060492, XXXX, 02			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Analysis: TOTAL IRON 6010B/3010A	FERROUS IRON 3500 FE B	Special Instructions/ Conditions of Receipt
S.T. INFLUENT SAMPLE	7/23/2007	1130		X			1		1				X	X	* SEE COMMENTS *

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Possible Hazard Identification

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☒ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	7/23/2007	1620	1. Received By	7-23-07	16:25
2. Relinquished By	7-23-07	17:00	2. Received By	7/24/07	0920
3. Relinquished By			3. Received By		

Comments

SAMPLE TO BE SHIPPED TO STL CHICAGO LABORATORY FOR ANALYSIS

DISTRIBUTION: WHITE - Returned to Client with Report. CANARY - Stays with the Sample. PINK - Field Copy

5512

Mannz, Rich

From: Michael.Bates@erm.com
Sent: Wednesday, July 25, 2007 1:33 PM
To: Mannz, Rich
Cc: Alan.Cork@erm.com
Subject: Influent discharge sample additional analysis request
Follow Up Flag: Follow up
Flag Status: Flagged

Rich,

Just a reminder, please run the sample (S.T. INFLUENT SAMPLE) for alkalinity as discussed per our discussion.

Thanks,

Michael D. Bates

Environmental Resources Management (ERM)
12755 Olive Blvd. Suite 110
St. Louis, MO 63141
Phone: (314) 682-3980
Fax: (314) 682-3970
Email: michael.bates@erm.com

LOGIN SAMPLE RECEIPT CHECK LIST

Client: ERM Inc. Job Number: 500-5512-1

Login Number: 5512

Question	T/F/NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	2.4
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

Attachment 2

JP-7 Sequestering Agent
MSDS & Product Bulletin

MATERIAL SAFETY DATA SHEET

JAEGER PRODUCTS, INC.
1611 PEACHLEAF
HOUSTON, TX 77039
281-449-9500

Product Name: JP-7

Date Prepared: June 18, 1986 Last Revision: May 2005

PRODUCT INFORMATION

Synonyms:	Sodium Phosphate
Chemical family:	Liquid Polyphosphate
Formula:	Proprietary
Maximum Use:	30.0mg/l

PRECAUTIONARY INFORMATION

Precautionary Statement:	No Significant Health Effects reported From manufacturing locations.

(As defined by OSHA Hazard Communications Standard)

INGREDIENTS/COMPONENTS

Chemical Identity:	Sodium Polyphosphate
OSHA PEL:	Not listed
ACGIH TLV:	Not listed
CAS#:	68915-31-1
Hazard Class:	None

PHYSICAL DATA

Boiling Point:	Above 212°F
Melting Point:	Not Applicable
Vapor Pressure:	Not Applicable
Vapor Density (Air = 1)	Not Applicable
Specific Gravity (H_2O = 1)	1.367
Evaporation Rate (Butyl Acetate = 1)	Non-Volatile
Solubility in Water by Weight:	Complete
pH (neat):	5.2 +/- 0.5
Appearance:	Clear Liquid
Odor:	Slight

PRODUCT BULLETIN — JP-7

Superior performance by design™
JAEGER PRODUCTS, INC.

JAEGER PRODUCTS JP-7

JP-7 is a proven technology, linear chain, polymerized phosphate. The non-toxic formulation specifically sequesters soluble iron, manganese, calcium, magnesium and silica in the water. JP-7 also acts as a corrosion inhibitor, laying down a microscopic film to lower the corrosion rates of iron, copper, lead and other piping materials.

JP-7 is a liquid, inorganic polyphosphate produced using the latest techniques in thermally reacted chemical manufacturing. It is manufactured to meet certification by the National Sanitation Foundation (NSF), United States Department of Agriculture (USDA) and the United States Environmental Protection Agency (USEPA). JP-7 performs as a superior sequesterant, dispersant and buffering agent in water systems where the requirement of potability must be met. To meet a variety of water quality challenges, JP-7:

- Reduces operating costs
- Inhibits scale formation
- Controls fouling caused by iron and manganese
- Removes existing tuberculation
- Assists in controlling algae growth by penetrating biofilm layer

DOSAGE RATES

Dosage rates for individual systems can be determined by Jaeger Products by evaluating current treatment and the type and condition of system. JP-7 is easily dispensed from the shipping container. No mixing is necessary, saving time and labor.

SHIPPING-HANDLING-STORAGE

JP-7 is available in containers ranging from one gallon to bulk tank quantities and can be shipped directly from our manufacturing facility or our Houston warehouse. JP-7 should be stored in clean, dry area for quality assurance. Keep the container closed when not in use and protect from freezing and extreme heat.

PROPERTIES

- Meets NSF Standard 60
- Indefinite shelf life
- Totally soluble
- Freeze/thaw stable
- 11.4 pounds per gallon
- pH (1% solution) — 6.8
- No taste or odor
- Contains no zinc

1611 Peach Leaf • Houston, Texas 77039
Phone: **(281) 449-9500** • FAX: (281) 449-9400
(800) 678-0345